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ABSTRACT

Many persons in the United States and other countries in the second half of the twentieth century have learned about the mysteries and problems of the oceans from television. This paper highlights the chronology of television presentations about aquatic and marine topics and research documenting the impact of such presentations on viewer knowledge and attitudes. The impact of single documentaries, news broadcasts, and broadcast media are among the topics discussed. A brief bibliography is included. (CW)

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Broadcast Media Contributions to Marine and Aquatic Education

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From Disney and National Geographic the television viewers of the second half of this century learned about the mysteries of the deep. Cousteau's divers admonished us to care about marine environments and led us to wonder at their diversity. NBC News asked us "Who Killed Lake Erie?" in 1969 and NOVA showed us troubled waters in the 1980s. This session will highlight the chronology of television presentations about marine and aquatic topics and present research documenting the impact of such presentations on viewer knowledge and attitudes.

Fred Jerome, Executive Vice President of the Scientists' Institute for Public Information has stated that "for the vast majority of the American public, the TV set is the only teacher. ...The medium that more than any other molds the American consciousness is television (SIPI, 1989, p.9). When asked to identify the source of their information about the oceans and other aquatic systems, most students and adults do say that television is the main information source. In fact, of students tested in Ohio and Virginia since 1978, up to 28% of fifth graders, 37% of ninth graders and 39% of tenth graders attribute their knowledge to this source (Fortner and Teates, 1980; Fortner and Mayer, 1983, 1988). The single experience variable most closely related to oceanic knowledge in the Virginia study was the number of Cousteau television programs seen in a year (Fortner and Teates, 1980). Walter and Lien's (1985) study among Canadian students found that 30% cited television as their most important source of marine information, and Alaimo and Doran (1980), studying high school students' perception of the environment, found a generally high perception of television as a source of information for all grade levels, although perception of magazines and newspapers as information sources increased with grade level.

Among adults, Murch (1971) found that 73% of Durham, NC, residents identified television as their major source of pollution information, and Kent and Rush (1971) noted that senior citizens indicated television was the best way to keep up with the nation's problems. Kellert's surveys

(1980) examined television as a means of contact with wildlife, revealing that 28% watch marine documentaries on a regular basis. The only specifically marine documentary series included in the survey was the Jacques Cousteau series. Fifty-five percent of the respondents reported that Cousteau programs had a strong or moderate influence on their views and knowledge of wildlife.

Single Documentary Impacts

Do people really learn about the world of water by watching television, or is TV such a pervasive force in modern life that its importance to learning is overrated? To test the impact of a single marine documentary on viewer knowledge and attitudes, two studies were done with the cooperation of the Cousteau Society, Warner QUBE in Columbus, Ohio, and the Worthington City Schools near Columbus. The Cousteau Society granted researchers access to an untelevised documentary, "The Warm-Blooded Sea: Mammals of the Deep," so that pretest questions could be developed to relate specifically to the contents of the program. Warner QUBE, a cable system with viewer response capability at that time, narrowcast the pretest to selected viewers and invited participation in further research involving the program. Participants answered the same questions after the program as an immediate posttest, and took a delayed test two weeks later (Fortner and Lyon, 1985).

The QUBE viewers did gain significantly in knowledge of marine mammals following the program, and the knowledge level remained high for at least two weeks (Figure 1). Attitudes of the viewers shifted toward the affective goals of the producers, but within two weeks had resumed prebroadcast levels. A group of QUBE viewers who did not watch the program served as the control, and the scores of this group did not differ from the study group's pretest knowledge and attitude level. Apparently adult viewers of a single marine documentary can gain lasting knowledge from the experience of viewing, but adult attitudes are influenced only temporarily.

A group of ninth grade students was also tested for knowledge and attitude change related to the same documentary (Fortner 1985). Half of one science teacher's classes were required to

watch the program at home, while the other half were taught in class using the script of the documentary. The knowledge gain of both groups equalled that of the adult viewers (Figure 1), but the attitudes of those taught using the script only were not significantly affected.

The Cousteau Society has been producing marine documentary series for television since 1968. The first program, "Sharks," is still popular with viewers. Nine Emmy Awards and a Chris Bronze Plaque are testimony to the quality and appeal of the programs, and it is apparent that production goals for audience attitudes are being met, at least temporarily, with the sample tested. Attitude impacts are coming from the filmmaking techniques rather than the choice of words in the script, a phenomenon that needs to be explored further.

Also in need of further research is the impact over time of viewing a number of examples of affective programming. Though one documentary's effect may be fleeting, could the impact of, say, twenty years of viewing be a stronger and longer lasting commitment to ocean protection? It has been documented that the mass media helped establish the environment as an issue (Schoenfeld, 1977) and marine and aquatic environments are part of that issue.

TV News Impacts

For most of our history, the environment has not been a genuine news topic (Schoenfeld, 1980). "Real" news is hot, eventful, characterized by crisis or personality. Rarely does the marine environment fit these descriptors, but in extreme instances of pollution, television news documentaries have been produced, such as NBC's White Paper in 1969, "Who Killed Lake Erie?" Again in the late 1980s news of syringes on beaches, plastic bags in sea turtle guts, and oil spills in pristine water brought aquatic environments to public consciousness through crisis reports and special documentaries.

Daily television news still must respond to all types of events in a day's time, however, and it is unlikely that significant portions of the news hole will be consistently filled with aquatic news. In an effort to gauge the impact of such brief exposures to aquatic issues, research was conducted

with the cooperation of the CBS affiliate in Cleveland, Ohio. WJW-TV8 produced a week-long series of informational news clips about Lake Erie in May 1989. In each segment, viewers were asked four multiple choice questions, a video clip was shown, and answers to the questions were given. Viewers were then invited to go to local libraries to take a complete survey and receive a free Lake Erie game.

Responses to the library survey indicated that the televised questions were answered correctly 70% of the time, and the other questions only 50% of the time by those who indicated they had seen all the news broadcasts (Brothers, 1990). A baseline study conducted before the week of programming indicated there was no difference in difficulty between the two types of questions. Library respondents therefore were apparently remembering the televised information even from brief news segments. Overall, however, respondents who selected "activities on or at the lake" as their main information source outscored those who selected television as the main source, by scores of 63% to 53%, respectively.

The television news department was quite willing to invest in the opportunity for public education about Lake Erie. The staff selected a ratings week in which to air the broadcasts, presuming that such a program segment would increase market share. It was interesting for the researchers to note the television station's choice of items to broadcast. Generally, the questions related to economic value of the resource, human health issues, and recreation. More substantive topics such as management issues, scientific processes, and industrial impacts were avoided.

Available Broadcast Media

Given that people can learn about marine and aquatic environments from a single documentary, and from daily television news, what opportunities exist for broadcast media to affect public awareness? Fortner and Wigginton (in press) compared all available channels in the San Francisco and Columbus, OH, television markets to determine the amount of natural history programming available in 1986 compared to a similar study in 1973 (Dickson, 1973). They found

that 1986 had a greater percentage of total air time (1.3%) devoted to natural history than 1973 (0.4%), and that more such programs were aired in prime time in Columbus (1.9%) than in the Bay area (1.4%). These numbers are minute in relation to the time available, and not even all of the programs identified were aquatic content.

There is a perception, however, that recent years have brought an increase in environmental programming. The Discovery Channel (TDC) listed six to nine hours of natural history programming per day in 1989, with many programs repeated at different viewing times. TDC has aired special programs for "Shark Week," produced its own marine environmental documentaries such as "The Black Tide," and will air a new eight-part series about the ocean, "The Blue Revolution" in advance of Earth Day 1990. Ted Turner, whose WTBS now reaches 35 million households, has said, "We produce documentaries to make a contribution to our planet." When corporate sponsors withdrew support of Audubon documentaries on WTBS in 1990, Turner vowed to keep them on the air some other way. The station broadcasts the Cousteau specials even though the programs are expensive and the audiences small.

Other developments in the 1990s will include PBS's commitment to environmental programming, which will undoubtedly include some aquatic topics. PBS's Nature series, for years the most popular series on that network, will be joined by additional single programs and series such as "The Miracle Planet." The Canadian Broadcasting Corporation's The Nature of Things is aimed at filling a critical gap in public knowledge of environmental issues, and recent programs have taken a hard look at choices facing developed nations for care of the planet.

Conclusion

"Perhaps an important function of the mass media in emerging social issues is to develop the audience's knowledge and concern to the point where interpersonal contacts and more specialized media -- with heavier emphasis on personal involvement-- are sought out and utilized" (Novic and Sandman, 1974, p. 449). Dana (1969) suggested that mass media communications

probably have more effect on the American mind than all the formal educational institutions put together, and that "properly used, they can be an outstanding means of educating the public as to the importance of the natural environment in the economy, social, and cultural life of the nation (p. 14). For marine and aquatic education, television is shown to be capable of making a difference. It remains for marine educators to use the medium for all its potential in public awareness and education.

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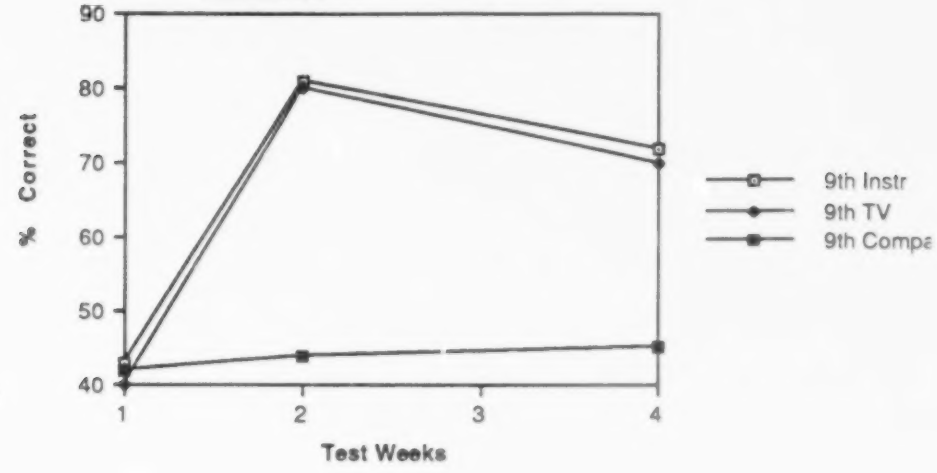
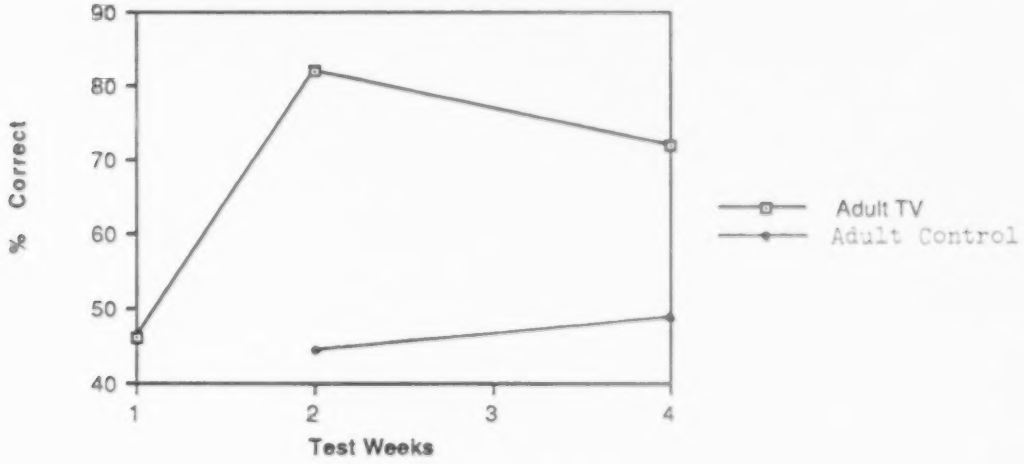
FIGURE 1

Student Scores on Comparative Instruction Methods



Adult Scores on Knowledge from TV



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